

## **Amino Acid and Sucrose Reactions: Real Time Analysis using Gerstel TDU-GC/MS**

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A Gerstel TDU (Thermal Desorption Unit) was used to react amino acids with sucrose and subsequently analyze the formation of volatile compounds in real time using GC/MS. It was observed that the reaction between sucrose and three amino acids (arginine, lysine, and methionine) yields many of the volatiles observed when roasting peanuts. These three amino acids are prevalent in the region of Arah1 used as a differential flavor marker, which was presented by Julie Marshall of LCU during The APRES 2018 Annual Meeting in a talk titled "Marker Assisted Selection of Peanut Storage Proteins for Flavor Potential." The number of lysine, methionine, and arginine residues in the translated sequences were compared with Florunner sequences hypothesized to be characteristic of desirable roasted peanutty flavor. These results provide further evidence that this marker plays a key role in providing peanuts with its desirable roasted peanut flavor.